Heredity

An International Journal
of Genetics
founded by
C. D. Darlington and R. A. Fisher

Owned by the Genetical Society
of Great Britain

Edited by
J. S. Parker and M. J. Kearsey

Volume 66 1991

Blackwell Scientific Publications
OXFORD • LONDON • EDINBURGH • BOSTON
MELBOURNE • BERLIN • PARIS • VIENNA

© The Genetical Society of Great Britain

COPYRIGHT AND PHOTOCOPYING:
© 1991 The Genetical Society of Great Britain. Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by The Genetical Society of Great Britain. For libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, authorization is granted provided that the base fee of $5.00 per copy is paid directly to CCC, 27 Congress Street, Salem, MA 01970, USA. This consent does not extend to other kinds of copying, such as copying for general distribution for advertising or promotional purposes, for creating new collective works or for resale. Special requests should be addressed to the Editor 0018-067X/91 $5.00.

Published by Blackwell Scientific Publications Ltd
Osney Mead, Oxford OX2 0EL, UK
25 John St, London WC1N 2BL, UK
23 Ainslie Place, Edinburgh EH3 6AK, UK
3 Cambridge Center, Suite 208, Cambridge, MA 02142, USA
54 University St, Carlton, Victoria 3053, Australia
Arnette SA, 2 rue Casimir-Delavigne, 75006 Paris, France
Blackwell Wissenschaft, Meinekestrasse 4, D-1000 Berlin 15, Germany
Blackwell MZV, Feldgasse 13, A-1238 Wien, Austria

ISSN 0018 067X

Printed in Great Britain by Henry Ling Ltd at the Dorset Press, Dorchester, Dorset

Volume contents

Number 1 February 1991

1 *P. Borsa, M. Zainuri and B. Delay*
Heterozygote deficiency and population structure in the bivalve *Ruditapes decussatus*

9 *P. Martínez, A. Viñas, C. Bouza, J. Arias, R. Amaro and L. Sánchez*
Cytogenetical characterization of hatchery stocks and natural populations of Sea and Brown Trout from northwestern Spain

19 *J. M. M. Van Damme*
A restorer gene in gynodioecious *Plantago coronopus* subject to selection in the gametophytic and seedling stage

29 *B. J. Zwaan, R. Bijlsma and R. F. Hoekstra*
On the developmental theory of ageing. I. Starvation resistance and longevity in *Drosophila melanogaster* in relation to pre-adult breeding conditions

41 *L. Nigro*
The effect of heteroplasmy on cytoplasmic incompatibility in transplasmic lines of *Drosophila simulans* showing a complete replacement of the mitochondrial DNA

47 *A. J. Watkins and M. R. Macnair*
Genetics of arsenic tolerance in *Agrostis capillaris* L.

55 *Y. A. El-Kassaby and R. Davidson*
Impact of pollination environment manipulation on the apparent outcrossing rate in a Douglas-fir seed orchard

61 *F. Romera, M. M. Jiménez and M. J. Puertas*
Genetic control of the rate of transmission of rye B chromosomes. I. Effects in 2B × 0B crosses

67 *L. M. Cook and G. Kenyon*
Frequency-dependent selection with background heterogeneity

75 *J. B. Gibson, A. Cao, J. Symonds and D. Reed*
Low activity *sn*-glycerol-3-phosphate dehydrogenase variants in natural populations of *Drosophila melanogaster*

83 *K. Hindar, B. Jonsson, N. Ryman and G. Ståhl*
Genetic relationships among landlocked, resident and anadromous Brown Trout, *Salmo trutta* L.

93 *J. Murray, O. C. Stine and M. S. Johnson*
The evolution of mitochondrial DNA in *Partula*

105 *M. A. Hughes*
The cyanogenic polymorphism in *Trifolium repens* L. (white clover)

117 *Z. W. Luo and M. J. Kearsey*
Maximum likelihood estimation of linkage between a marker gene and a quantitative trait locus. II. Application to backcross and doubled haploid populations

125 *R. C. Fleischer, S. Conant and M. P. Morin*
Genetic variation in native and translocated populations of the Laysan finch (*Telespiza cantans*)

131 *F. Villani, M. Pigliucci, S. Benedettelli and M. Cherubini*
Genetic differentiation among Turkish chestnut (*Castanea sativa* Mill.) populations

137 *D. J. Perry and P. Knowles*
Spatial genetic structure within three sugar maple (*Acer saccharum* Marsh.) stands

143 *I. Yonemura, T. Motoyama, H. Hasekura and B. Boettcher*
Relationship between genotypes of longevity genes and developmental speed in *Drosophila melanogaster*

151 *R. D. Ward, T. Warwick and A. J. Knight*
Further genetic analysis of polymorphic enzyme loci in *Littorina saxatilis* (Prosobranchia: Mollusca)

Number 2 April 1991

161 *P. Eggleston*
The control of insect-borne disease through recombinant DNA technology

173 *S. H. James, J. Playford and J. F. Sampson*
Complex hybridity in *Isotoma petraea*. VIII. Variation for seed aborting lethal genes in O6 Pigeon Rock population

181 *R. Van Treuren, R. Bijlsma, W. Van Delden and N. J. Ouborg*
The significance of genetic erosion in the process of extinction. I. Genetic differentiation in *Salvia pratensis* and *Scabiosa columbaria* in relation to population size

191 *A. Rus Hoelzel and G. A. Dover*
Genetic differentiation between sympatric Killer whale populations

197 *W. Staiber*
Preferential pairing in the germ line limited chromosomes of *Acricotopus lucidus* (Diptera, Chironomidae)

203 *I. Linde-Laursen and J. Jensen*
Genome and chromosome disposition at somatic metaphase in a *Hordeum* × *Psathyrostachys* hybrid

211 *J. S. Parker, G. H. Jones, L. A. Edgar and C. Whitehouse*
The population cytogenetics of *Crepis capillaris*. IV. The distroibution of B-chromosomes in British populations

219 *C. J. Bidau*
Multivalents resulting from monobrachial homologies within a hybrid zone in *Dichroplus pratensis* (Acrididae): meiotic orientation and segregation

233 *H. Naveira and A. Fontdevila*
The evolutionary history of *D. buzzatii*. XXII. Chromosomal and genic sterility in male hybrids of *Drosophila buzzatii* and *Drosophila koepferae*

241 *L. Sánchez, P. Martínez, C. Bouza and A. Viñas*
Chromosomal heterochromatin differentiation in *Salmo trutta* with restriction enzymes

251 *J. W. Snape, E. Nevo, B. B. Parker, D. Leckie and A. Morgunov*
Herbicide response polymorphism in wild populations of emmer wheat

259 *I. Yonemura, T. Motoyana, H. Hasekura and B. Boettcher*
Cytoplasmic influence on the expression of nuclear genes affecting life span in *Drosophila melanogaster*

265 *J. A. Ferrari and G. P. Georghiou*
Quantitative genetic variation of esterase activity associated with a gene amplification in *Culex quinquefasciatus*

273 *F. K. Kasule*
Quantitative variation in adult size and fecundity of the cotton stainer bug *Dysdercus fasciatus*

281 *F. K. Kasule*
Associations of fecundity with adult size in the cotton stainer bug *Dysdercus fasciatus*

287 *B. C. Husband and S. C. H. Barrett*
Colonization history and population genetic structure of *Eichhornia paniculata* in Jamaica

297 *R. A. Nichols and D. J. Balding*
Effects of population structure on DNA fingerprint analysis in forensic science

303 Errata

Number 3 June 1991

305 *J. S. Shore*
Tetrasomic inheritance and isozyme variation in *Turnera ulmifolia* vars. *elegans* Urb. and *intermedia* Urb. (Turneraceae)

313 *A. García-Dorado, P. Martin and N. García*
Soft selection and quantitative genetic variation: a laboratory experiment

325 *E. Viseras and J. P. M. Camacho*
Effects and maintenance of a pericentric inversion polymorphism in the grasshopper *Aiolopus strepens*

333 *J. R. de Miranda, M. Hemmat and P. Eggleston*
The competition diallel and the exploitation and interference components of larval competition in *Drosophila melanogaster*

343 *G. B. Hartl, G. Lang, F. Klein and R. Willing*
Relationships between allozymes, heterozygosity and morphological characters in red deer (*Cervus elaphus*) and the influence of selective hunting on allele frequency distributions

351 *E. A. Gileva and V. B. Fedorov*
Sex ratio, XY females and absence of inbreeding in a population of the Wood Lemming, *Myopus schisticolor* Lilljeborg, 1844

357 *E. Heikkinen*
Wrinkling of the eye in hybrids between *Drosophila virilis* and *Drosophila lummei* is caused by interaction of maternal and zygotic genes

367 *D. Ohri and M. Pal*
The origin of chickpea (*Cicer arietinum* L.): karyotype and nuclear DNA amount

373 *H. Tegelström, J. Searle, J. Brookfield and S. Mercer*
Multiple paternity in wild common shrews (*Sorex araneus*) is confirmed by DNA fingerprinting

381 *W. T. B. Thomas, W. Powell and J. S. Swanston*
The effects of major genes on quantitatively varying characters in barley. 4. The *GPert* and *denso* loci and quality characters

391 *J. P. Stevens and S. M. Bougourd*
The frequency and meiotic behaviour of structural chromosome variants in natural populations of *Allium schoenoprasum* L. (wild chives) in Europe

403 *R. Lozano, C. R. Rejón and M. R. Rejón*
An analysis of coho salmon chromatin by means of C-banding, AG- and fluorochrome staining, and *in situ* digestion with restriction endonucleases

411 *B. A. García, C. N. Gardenal and A. Blanco*
Microgeographic disrtribution of allele frequencies in populations of *Calomys laucha* (Rodentia, Cricetidae)

419 *H. R. Siegismund and J. Müller*
Genetic structure of *Gammarus fossarum* populations

437 *M. O. Humphreys*
A genetic approach to the multivariate differentiation of perennial ryegrass (*Lolium perennde* L.) populations

445 *L. Zhang and H. Lefcort*
The effects of ploidy level on the thermal distributions of brine shrimp *Artemia parthenogenetica* and its ecological implications

453 *I. P. Gorlov, T. Y. Ladygina, O. L. Serov and P. M. Borodin*
Positional control of chiasma distribution in the house mouse. Chiasma distribution in mice homozygous for an inversion in chromosome 1

459 Author index

462 Keyword index